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Attention is called to the "Wants" column. It is invaluable to those who use it in soliciting information or seeking new positions. The name and address of applicants should be given in full, so that answers will go direct to them. The "Exchange" column is likewise open.

NOTES ON THE FLORA OF LONG ISLAND.

BY SMITH ELY JELLIFFE, M.D., BROOKLYN, N.Y.

THE flora of Long Island is one of some degree of richness, which upon a casual observation would seem to be a somewhat anomalous statement, for it would appear that a sand waste a few miles wide and about a hundred miles in length would hardly be a place upon which a rich or abundant flora could flourish.

Long Island, so geologists tell us, is a portion of the terminal moraine of the glacier that stretched across the country from east to west; traversing the entire length of the island there is a rocky ledge, the so-called "back bone," from which the land falls in more or less steep descents to the north, and in long gradual slopes southward; the whole coast is rich in fresh and salt water marshes, which are more pronounced upon the southern coast.

The earliest notices upon the subject are to found in a paper published in 1807, entitled "Plantæ Plandomensis," or a catalogue of the plants growing near Plandome, Queens County, by Caspar Wistar Eddy. In 1835, J. B. Zabriskie published a "List of Plants Growing near Erasmus Hall, Flatbush," and from 1843 to 1853 John Torrey M.D., in his publication on the "Flora of New York," included many Long Island plants. In 1874, E. S. Miller and D. W. Young published their "Catalogue of the Plants of Suffolk County," to which additions were made in the Bulletin of the Torrey Botanical Club. This journal also contains many notes upon the island flora. C. H. Peck, N. L. Britton, A. H. Hollick, Geo. D. Hulst, W. H. Rudkin, W. H. Leggett, J. L. Zabriskie, Mrs. E. G. Britton, Mrs L. D. Pychouska, F. E. Tillinghast and others have contributed notes from time to time upon new or interesting plants found on the island.

In round numbers about 1500 phænogamous plants have been recorded; the work in the cryptogams has been scanty, yet the writer has records of upwards of 750 species, which promises much for the numerical value of this portion of the flora when more completely studied.

The most characteristic of the plants are found in the salt marshes and along the sands of the sea coast, here are a number of interesting grasses and sedges, including Fuirena squarrosa, Heleocharis Robbinsii, rostellata and melanocarpa, Scirpus subterminalis, Rhyncospora nitens, Calamagrostis Nuttalliana, Glycenaspfluitans, Eragrostis pectinacea and others; the salt-loving plants as Ranunculus cymbalaria, Lecheas, racemulosa, minor and major; Hudsonia tomentosus in quantities and H. ericoides, though much rarer, Prunus maritima and several of the more common forms are constantly to be found at almost all points along the southern shore. In the fresher marshes Spiranthes, Habenaria, Calopogon and Pogonia. Cypripidiun and Goodyera are intermingled with rush and sedge and grass.

Along the ridges and in the higher lands the Composites, Labiates and Graminiæ are widely distributed, there seeming to be a nearly equal distribution throughout the three counties. In general, however, the plants found in Suffolk county are among the most characteristic, there being there some fifty or sixty plants that belong to the New Jersey pine-barren flora and whose presence is to be explained upon the geological grounds that this eastern portion of the island was at one time a portion of the Atlantic littoral plain. Among those plants found in Suffolk county, some of which are also to be met with in Queen county, there may be mentioned Camelina sativa, Reseda luteola, Drosera longifolia and filiformis, Ascyrum stans and Crux andreæ, Arenaria squarrosa, Polygala lutea, Quercus phellos, Cyperus dentatus and Cupressus thyoides, as of more particular interest. Recent investigations by Dr. A. H Hollick, of Columbia College, have been directed to a better understanding of this portion of the flora, and interested botanists are referred to his papers in the Transactions of the New York Academy of Sciences.

The knowledge of the cryptogamic flora is still in its infancy. The ferns are well known and comprise the majority of the common Aspleniums and Aspidiums with here and there a more or less uncommon form, as Woodsia obtusa, Woodwardia angustifolia. The Bryophytes are represented by over 100 species, and it is certain that twice that number will be found when the collectors are more numerous and alert. Catharine a crispa is one of the rarer plants that has been found. The list of lichens is far from complete, 60 species are recorded and hardly a rock lichen collected. The number of species of fungi is 250, also a new field. The best known of the lower cryptogams are the marine algæ, they having been studied from the time of Professor Bailey to the present. Bostrychia rivularis, Callithamnion dietziae, which Professor Farlow, from a study of the original specimens in the herbarium of the Long Island Historical Society, is disposed to regard as a var. laxa of C. Baileyi, Callithamnion tenue are a few of those interesting algæ that are more or less uncommon. The diatoms are represented by a list of 78 species, which, with 45 species of fresh-water algæ, completes the numerical enumeration of the island's flora. Figures, however, are totally inadequate to express the characteristics of the flora of any region, however sparse it may be in vegetation, and it is hoped that in the near future a flora of Long Island will be in sufficiently advanced condition to warrant its publication, at least the portion recording the distribution of the phænogamous plants.

CONSUMPTION AMONG THE COLORED PEOPLE OF THE SOUTHERN STATES.

BY G. W. HUBBARD, M.D., NASHVILLE, TENN.

PROBABLY no greater change in the social condition of a people can be imagined than the transformation of a race from the state of slavery to that of freedom.

The colored people of the late slave-holding States have now been free for twenty-eight years; and their present condition in regard to health and mortality, as compared with that which prevailed before their emancipation, is an interesting question, not only to the physician, but also to the philanthropist and the student of social science.

It is almost, if not quite, impossible to obtain reliable vital statistics concerning the people of the Southern States outside the larger cities and towns; and it is only within a few years that even these have been complete and reliable.

In this article I shall consider only one disease, phthisis pulmonalis; but it may be well to remark that the general death-rate among the colored people in the southern cities, where statistics are attainable, is nearly twice as great as that among the whites.

I have made careful inquiries of many physicians who practised in the South before the late civil war, and it has been their universal testimony that pulmonary consumption was a comparatively rare disease among the slave population, some even affirming that it was entirely unknown. It would probably be safe to say that this disease was very much less frequent among the negroes than among the white people.

The prevalence of this disease at the present time will be seen from the statistics taken from the health reports of the following southern cities. The figures given represent the per cent of deaths from consumption, as compared with the total mortality from all causes; and also the proportion in 1,000 per annum.

	Proportion to Total Mortality.		Proportion in 1,000.	
	White.	Colored.	White.	Col red.
	Per cent.	Per cent.	Per cent.	Per cent.
Atlanta, Ga., 1892....	9	18	1.7	7.7
Baltimore, Md.....	9	15	2	4.8
Charleston, S.C., 1892.....	8	13	1.2	4 9
Memphis, Tenn.....	10	21	1.8	5.8
Nashville, Tenn.....	11	21	1 5	5.1
St. Louis, Mo., 1890.....	9	18	Average 1.6	Average 5.6
Norfolk, Va., March, April, and May, 1893	16	17		
Twenty-five towns in North Carolina, Feb., 1893....	8	22		

It will be seen from the above table that the rate of mortality in proportion to 1,000 of population per annum is nearly four times as great among the colored people as among the white. It is probable, however, that consumption is much less prevalent in the country districts.

I will now consider some of the causes that have probably produced this excessive death-rate from this disease.

1. Unhealthy dwellings, often situated on narrow alleys, reeking in filth and moral and physical pollution. 2. Improper food, often of poor quality and lacking in quantity. 3. Insufficient clothing and exposure in inclement weather. 4. Irregular habits and a lack of a proper amount of sleep. 5. Excessive use of alcoholic drink. 6. Ignorance concerning the laws of health. 7. Lack of medical attention and good nursing.

LETTERS TO THE EDITOR.

*** Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.*

On request in advance, one hundred copies of the number containing his communication will be furnished free to any correspondent.

The editor will be glad to publish any queries consonant with the character of the journal.

Variation and Evolution.

No branch of the study of natural history is more interesting, or more likely to lead to valuable results, than that of the causes of the large amount of variation which is exhibited by many species of animals.

If, as seems certain, what were at first varieties, in the process of time, by increase of the differential characteristics, or simply by these becoming permanent, originated new species, we are, while studying the causes which favor these variations, at the same time gaining an insight into those of the origin of species themselves.

No class of animals offers more favorable conditions for this study than the terrestrial and fresh-water mollusca. The great variety of conditions under which many species live, and the numerous varieties into which they are divided, together with the ease with which they may be collected and kept under observation, make them peculiarly suitable for our purpose.

Darwin says in an extract from one of his letters which I have lately seen: "In my opinion, the greatest error I have committed has been in not allowing sufficient weight to the direct action of environment, independently of natural selection." Probably those changes which are commenced in a species by the influence of environment are, in process of time, fixed by means of natural selection. That there is a preference exhibited for individuals of a like variety, even where the variation cannot be supposed to confer any benefit, may be proved by anyone who will observe the pairing of that most variable species, both in color and banding, *Helix nemoralis*, he will find, though with many exceptions, that among the pairs which he may discover by the roadside, soon after sunrise or in the evenings during spring and early summer, that there is a decided preference shown by these animals for individuals similar to themselves, the red varieties prefer to mate with those of their own color, as do the yellows; while, in a less degree, it will be found that the many-banded select mates among their own class rather than from the one-banded or unicolorous forms.

That in the majority of instances, at least, the progeny in those cases in which individuals of a similar variety have mated resemble the parents I have been enabled to prove by selective breeding. I am still continuing these experiments, and hope to have something further to say on the subject at a future time. Doubtless other species show preferences of this kind. I have referred, however, to those of which I have most experience. Is it not probable that *Helix hortensis* and *H. nemoralis* have been derived from a common form in comparatively recent times through varietal differences which have at last become specific?

Malacologists in America have opportunities denied to us in the old country. They have the great advantage of being able to study the variations, in introduced species, which have been produced as the consequences of that introduction.

As species introduced into a new country, under different climatic conditions to those under which they have previously lived, are in some degree similarly circumstanced to species living through climatic changes produced by alterations of land and water surfaces, etc., during the changes which all parts of the world have undergone during the long geological ages, we have in their cases a means of studying what changes certain conditions are able to produce, and consequently of gaining an insight into the causes which have helped to the development of our present fauna from their remote ancestors of the past. We can study the effects of a more equable climate in some parts, of greater heat or cold in others, of more and less moisture, of changes in the food-plants, of exposure to the attacks of new enemies, etc

The more this subject is investigated, the more, I believe, will become apparent the fact that all species possess latent powers which the proper stimulus in the shape of altered circumstances, such as those suggested, is capable of bringing into action for the benefit of themselves and their descendants.

The observations at present recorded relating to the causes of variation are scattered through a large number of publications, these, in a short series of articles for another journal, I have endeavored to bring together and arrange for reference. Some of the causes which the various writers have assigned as probably inducing variation may be mentioned. Deficiency of lime in the soil produces thin, horny shells, and in some degree may cause change in their shape. Moisture, when deficient, is supposed to favor the formation of thick, white shells among the terrestrial mollusca, while its extreme abundance prevents the formation of colored bands in those species usually possessing them. Deficiency of light (as in dense forests) has been referred to as the cause of dull, unicolorous shells, while those more exposed to its influence are often gaily colored. Heat, combined with moisture, is considered conducive to brilliant coloring, with dryness as increasing the influence of the latter, while among the fresh-water species it tends to the production of fragile, dwarfed shells, overcrowding among the latter having a nearly similar effect. Dense vegetation, impeding the progress of aquatic species, has been considered a cause of scalariform varieties. Flowing and stagnant water are well known to effect the *Limnacidæ* to a large extent. Muddy, rocky, and sandy bottoms also have their effects. Food is undoubtedly an element of great importance in the manufacture of varieties in its relative abundance and luxuriance, while other circumstances have been observed where certain plants existed in unusual abundance. The presence of certain molluscan enemies has been found coincident with peculiar deformities, e.g., that of *Hydra viridis*, with deformed examples of a species of